

second tarsal segments testaceous or brownish testaceous. Pubescence short, grayish, somewhat golden on hemelytra. Venter black, slightly shining, with hind margin of segments narrowly testaceous. Female unknown.

Head black with the two calloses near each eye and frontal callosities flavous; width across eyes, 1.15 mm. Antennae black-fuscous, shortly pilose, measurements—I, 30; II, 55; III, 46; IV, 46. Pronotum moderately obliquely narrowed anteriorly, with outer edge rectate, broadly roundly excavated behind, with basal width three times median length (130:40); callus moderately large, not extending laterally on explanata margins, set-off by the usual transverse sulci, with discal impression slightly in front of

middle, about one and a half times as long as hind lobe. Scutellum a little convex, with the usual transverse impression near the middle, slightly wider at base than median length (90:80). Hemelytra with flavous embolium edged along the margin with fuscous; membrane with four cells, dark fuscous, with two or three whitish spots in each cell.

Length, 4.00 mm; width, 0.90 mm.

*Type* (male), Witte Esbosch, on rockface trickling with water, South Africa, Jan. 10, 1927, G. E. Hutchison. *Paratypes*: 2 males, same data as type.

This species is smaller than *S. africana*, n. sp., and lacks the hairy clothing on dorsal surface of body.

ENTOMOLOGY.—*Ayurakitia*, a new genus of mosquito from northern Thailand (Diptera: Culicidae). DEED C. THURMAN, JR.<sup>1</sup> (Communicated by Ernestine B. Thurman.)

This new genus is proposed for a single Northern Thailand species, the males of which in general appearance seem similar to the males of the genus *Aedes* but differ morphologically in lacking postspiracular bristles. The presence of a fringe on the squama and the absence of both spiracular and postspiracular bristles bring the species into close relationship with those of *Haemagogus*, *Heizmannia*, *Ficalbia*, and *Mansonia* (*Coquillettidia*). However, *Haemagogus* and *Heizmannia* have the anterior pronotal lobes enlarged and all *Heizmannia* and some species of *Haemagogus* bear tufts of hair on the postnotum; *Ficalbia* have the proboscis swollen at the apex; and *Mansonia* (*Coquillettidia*) have distinct tibial bristles, and are large yellowish mosquitoes, while the new species has normal pronotal lobes, a bare postnotum, a normal proboscis, and no tibial bristles, and the specimens are small with silvery markings. Superficially the males somewhat resemble the males of

*Paraedes*, although the distinct generic characters of *Paraedes* (squama bare, postspiracular bristles present, and no lower mesepimeral bristles) serve to distinguish the two.

While this species is being separated from the genus *Aedes* on the lack of postspiracular bristles, Aitken (1941) erected *Kompia*, a lower Sonoran region subgenus of *Aedes*, for specimens (females) without postspiracular bristles, reporting that *Kompia* was closely related to the subgenus *Finlaya*, differing only in the absence of this character. Vargas (1950) relegated *Kompia* to synonymy under the subgenus *Ochlerotatus* based only on the structures of the male terminalia, disregarding the accepted subgeneric characters for females of *Ochlerotatus* (cerci long, eighth abdominal segment narrow and completely retractile) though females of *Kompia* are obviously different.

Should the absence of postspiracular bristles be disregarded and the new species be placed into the genus *Aedes* (following Aitken, 1941), the structures of the male terminalia would show a close affinity to *Aedes* (*Finlaya*) in lacking a basal lobe on the basistyle, and to *Aedes* (*Aedimorphus*) in that the dististyle is highly modified; but differing from *Finlaya* in having a simple claspette without an articulated appendage, and from *Aedimorphus* by possessing a

<sup>1</sup> Sanitarian, Division of International Health, United States Public Health Service, assigned as Regional Malaria Control Adviser for Northern Thailand with the U. S. A. Operations Mission to Thailand (USOM) of the Foreign Operations Administration. (This paper was submitted for publication by Mrs. Ernestine B. Thurman after the death of the author. Mr. Thurman died suddenly in Chiangmai of illness contracted while on duty in Northern Thailand only nine days prior to the completion of his assignment.)

claspette. However, the females of the new species can not be placed into any one of the subgenera of *Aedes* as listed by Edwards (1932), differing from *Finlaya* by having the eighth abdominal sternite not large and prominent; from *Ochlerotatus* by having the cerci short and the eighth abdominal segment broad and not completely retractile; from *Aedes* by being a light colored species with ornamentation and with upright scales on the head; from *Aedimorphus* by having a banded proboscis; and from *Christopheriomyia* by having broad, semi-erect scales on the anterior pronotal lobes. From *Kompi* the new species differs by having one lower mesepimeral bristle, setae on the head, and the postspiracular area without scales.

With the combination of characters as observed, it is impossible to place the Northern Thailand species into any of the presently recognized subgenera of *Aedes* or genera of Culicidae. Therefore, it seems more appropriate to erect a new genus, without attempting to expand the concept of the known genera, until additional information is obtained about the relationship of this species to others.

#### *Ayurakitia*, n. gen.

Genotype: *Ayurakitia griffithi*, n. sp.

Diagnostic characters: Margin of squama with fringe. Anterior pronotal lobes normal, well separated. Spiracular and postspiracular bristles absent. Pulvillus absent.

Subordinate characters: Male palpus slightly shorter than proboscis; female palpus one-sixth as long as proboscis. Wing membrane with distinct microtrichia at 45 X; vein 6 extending well beyond the base of the fork of vein 5; wing scales: Squame scales blunt, plume scales rounded at tip. Anterior pronotal lobe with long brown bristles, and without scales. Posterior pronotal lobe with several strong bristles and without scales. Postspiracular area without scales. One lower mesepimeral bristle well developed.

Male terminalia: Basistyle three times as long as wide with neither a subapical nor a basal lobe. Dististyle highly modified, less than one-half as long as basistyle. Tenth sternite narrow, curved, bladelike, ending in a sharp point. Claspette long, slender, spiralled, with one short and two long setae at apex.

#### *Ayurakitia griffithi*, n. sp.

*Male*: Small species of light golden coloring with yellow and pale golden scales and dark brown hairs. Pleura and sides of abdomen with silvery spots. Tarsi with basal silvery bands. Head: Dorsal surface mostly covered with flat golden scales, a row of silvery scales adjacent to eyes, a row of curved, dark brown bristles curving forward on anterior portion; centrally and posteriorly a patch of dark brown, upright scales. Proboscis dark brown with a ring of golden scales centrally, golden scales scattered from base to golden ring, dark apically. Clypeus bare, pale straw-colored. Palpus slightly shorter than proboscis, with few hairs, dark on basal and two apical segments; segments between these with light golden scales mixed with light brown scales. Antenna almost as long as palpus, normal, with long pale hairs; apical segments elongated and darker; basal segments pale.

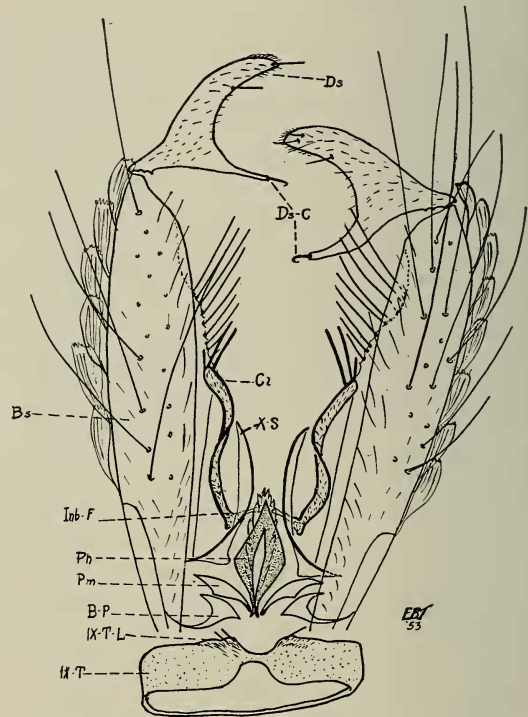


FIG. 1.—Structures of male terminalia of *Ayurakitia griffithi*, n. sp.

- |                          |                               |
|--------------------------|-------------------------------|
| B-P, Basal Plate         | IX-T, Ninth Tergite           |
| Bs, Basistyle            | Ix T-L, Lobe of Ninth Tergite |
| Cl, Claspette            | Ph, Phallosome                |
| Ds, Dististyle           | Pm, Paramere                  |
| Ds-C, Claw of Dististyle | X-S, Tenth Sternite           |
| Inb-F, Interbasal Fold   |                               |

Thorax: Mesonotal integument light brown with thin, curved, appressed, dark brown scales and dark brown, short, curved setae. Tubercles for dorsocentral and prescutellar bristles present but most of these bristles missing. Integument of anterior pronotal lobe without scales, pale and clear with six long, dark brown bristles and two large posterior-pronotal bristles. Pleural integument without dark areas, light brown on upper portion and light golden toward coxae; patches of large, broad, silvery-white semi-erect scales on the following sclerites; propleuron, upper and lower portions of sternopleuron, upper mesepimeron, and meron. Wing 3 mm. Anterior and posterior fork cells of wings fairly long. Anterior fork longer than stem. Veins with moderately thick scaling, fairly broad, brown scales especially on anterior veins, scaling thinner toward tips; plume scales thin, elongate, rounded; squame scales blunt. Legs: Foreleg, femur dark brown scaled above, pale golden posteriorly and ventrally with a tiny tip of few silvery scales; tibia with dark brown scales above, pale golden posteriorly and ventrally; first tarsal segment equal to length of remaining segments, an anterior basal patch of silvery white scales not quite encircling the segment, a similar patch at the base of the second segment, remaining segments dark; large claw with a thin blunt tooth; small claw simple. Midleg, anterior surface dark brown scaled, a spot of silvery scales just beyond the middle of the femur; femur silvery tipped, ventrally pale golden; tibia dark anteriorly, pale golden ventrally and posteriorly except at apex; first and second tarsal segments silvery scaled basally, remainder of tarsal segments dark scaled; large and small claw simple. Hindleg, femur dark anteriorly with a silvery spot just beyond the middle, posteriorly and ventrally pale scaled except for the dark tip; tibia with an indefinite, broad ring of silvery scales, dark-ringed apically; all tarsal segments with a basal ring of silvery scales, except segment 5 which is all dark; claws small and simple. Halteres pale with capitellum dark scaled. Abdomen: Integument light golden scaled, with an indefinite triangle of brown scales centrally and apically on each segment, brown scales extending onto lateral margins, encircling a patch of silvery iridescent scales on each segment.

Terminalia: Basistyle three times as long as wide, outer surface covered with long, ridged scales rounded apically, long setae, and fine

spicules; ventral edge with an area of dense setae beyond the middle. Dististyle less than half the length of basistyle; narrow at base with two indentations on inner surface; expanded from base to a wide apex; apex with a deep, central concavity; ventral arm curving toward concavity, clothed in fine setae; surface of concavity with setae and spicules to dorsal arm; dorsal arm narrow, bearing a retrose, spinelike claw; distance between arms at apex is equal to length of dististyle. Claspette not reaching middle of basistyle, narrow, half-spiralled with apex toward basistyle; apex rounded bearing two long setae, and a few minute setae; spiculations to base and on inner basal fold. Tenth sternite narrow, curved, bladelike. Phallosome simple, open at base; dorsal surface with lateral triangular flanges anterior to middle, ventral surface narrow with six fingerlike points from apex to base. Paramere triangular in shape; rounded basally; pointed apically; laterally expanded beyond middle. Basal arm broad and rounded, tapering sharply, curving abruptly into a long point. Ninth tergite with definite apical lobes each bearing two setae; concave medially; basal surface with deep concavity medially forming a bridge between the lobes.

*Female:* Coloration and size similar to male. Head: Palpus dark scaled, about one-sixth the length of proboscis. Proboscis dark scaled apically; pale ring not complete, upper surface dark brown scaled. Antenna normal, almost as long as proboscis; 4 or 5 dark hairs in whorl at base of each segment, and many short hairs on each segment; integument dark. Torus dark brown. First flagellar segment with few small, dark setae. Occiput similar to male. Thorax: Mesonotal integument similar to male. Scutellum rubbed, only a few dark brown scales remaining on lobes. Wing veins more heavily scaled than the male, scales dark brown with slight copperish luster. Pleura rubbed, silvery scales remaining on propleuron, upper and lower portions of sternopleuron, and upper mesepimeron. Legs: Foreleg, golden scaled with a few scattered dark scales; some long brown setae; femur golden scaled; first and second tarsal segments dark with white basal bands; other segments dark. Last three tarsal segments missing from hind leg, otherwise midlegs and hindlegs same as male. Claws simple.

Holotype male, allotype, seven paratypes,



and two slides of male terminalia: U.S.N.M. no. 62022.

*Type locality:* Doi (mountain) Chom Cheng, a peak of the Doi Sutep Range, Chiangmai Province, Thailand. January 4, 1953, two males (Deed C. Thurman, Jr.); February 14, 1953, one male (Deed C. Thurman, Jr.) and one male and two females (Manop Rattanopradith); February 24, 1953, two males and one female (Deed C. and Ernestine B. Thurman). Specimens were netted while resting on trees in a shaded jungle valley. Immature stages are unknown.

The genus is named in honor of Dr. Luang Ayurakit Kosol, director of the Division of Malaria and Filariasis Control of the Department of Public Health of the Ministry of Health of Thailand, and the species in honor of Dr. Melvin E. Griffith, chief adviser of the Malaria and Filariasis Control Section of the U. S. A. Operations Mission to Thailand, FOA.

The first two males were collected with a net while they were resting on the side of a tree growing in a damp, cool, shady mountain valley at about 3,000 feet elevation, and the other specimens from the same valley during later trips. The valley drops about 100 to 200 feet below the crest of a hill, the site of a rest cabin owned by an American missionary nurse. The hill is known in the local hill-tribe language as "Wong Kut" (meaning an open or cleared peak).

"Wong Kut" is a part of Doi Chom Cheng and Doi Pui, mountain peaks to the northeast of Doi Sutep. The entire range, which is just west of the city of Chiangmai, Chiangmai Province, is known as the Doi Sutep Range after the administrative region of Sutep and collectively the peaks are usually spoken of as Doi Sutep. In order to reach the rest cabin, the collectors climbed a narrow, steep jungle trail from the bottom of the east side of Doi Sutep to midway on the east slope of Doi Chom Cheng. All

supplies and equipment were transported by man-carriers. By using the rest cabin as the center of operations, it was possible to do general insect collecting, with emphasis on mosquitoes, for the full length of the trail and on to the summit of Doi Chom Cheng (elevation, 6,000 feet). The jungle was quite dense and the climb too difficult to attempt descending the west side of the mountain; therefore, collections were confined to the more accessible slopes and the valleys on the east side.

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